Patent claims

1. A method of producing a multilayer seal, comprising the steps of:

- preparing a plurality of substantially planar sheets (A, B);
- obtaining at least one channel (3) on at least one face of at least one of said sheets (A);
- placing at least a first and a second of said sheets (A, B) into close mutual contact so that said at least one face with said channel (3) in said first sheet faces said second sheet;
- sealing the edges (5, 5', 6, 6', 106) of said first and second sheets so that the volume (23) confined between said first and second sheets is hermetically isolated from the outside environment;
- bringing said hermetically isolated volume (23) to a preset pressure value.

2. A method as claimed in claim 1, wherein said volume (23) is connected with a pressure detector (31, 131).

3. A method as claimed in claim 1, wherein a plurality of channels (3), arranged parallel to one another or in serpentine or in a grid or radially, are obtained on at least one face of at least one of said sheets (A).

4. A method as claimed in claim 1, wherein said sheets (A) forming the layers (1, 1') of the multilayer seal are substantially rectangular metal sheets.

5. A method as claimed in any preceding claim, wherein, after attainment of said channels (3), said sheets are submitted to a shaping step to obtain corresponding hollow cylindrical bodies (1, 1'), and wherein said sheets are superimposed by placing the obtained cylinders (1, 1') inside one another.

6. A method as claimed in claim 5, wherein said shaping step is obtained by means of a curving process followed by welding along two contiguous edges (5, 5', 6, 6').

7. A method as claimed in claim 5 or 6, wherein after said

shaping, said cylinders (1, 1') are submitted to a deformation step to obtain a corrugated profile.

8. A method as claimed in claim 5, wherein said edges (5, 5', 6, 6') are sealed by welding through the interposition of a corresponding first and second insert (7, 9).

9. A method as claimed in claim 1, wherein said sheets forming the layers (1, 1') of the multilayer seal are substantially disc-shaped metal sheets (B).

10. A method as claimed in claim 9, wherein said discs (101, 101') are joined together along their circumferential edges (106) by welding through the interposition of a corresponding insert (127).

11. A method as claimed in claim 9, wherein after attainment of said channels (3) said discs (101, 101') are submitted to a deformation step to obtain a corrugated profile.

12. A method as claimed in claim 9, wherein said deformation step is obtained through a pot die forming or roll forming process.

13. A method as claimed in any preceding claim, wherein said channels (3) are obtained through mechanical deformation, laser technology, chemical corrosion, deposition of material or application of spacers onto the surface of said sheet.

14. A method as claimed in any preceding claim, wherein said channels have half-circular, rectangular or triangular cross-sectional shapes.

15. A method as claimed in any preceding claim, wherein said volume (23) is brought to a pressure above/below the external pressure by means of a compression/suction device (35).

16. A multilayer seal comprising at least a first and a second superimposed layers, in close mutual contact and sealed along the edges (5, 5', 6, 6', 106) so as to define between said layers (1, 1', 101, 101') a corresponding volume (23), which is hermetically isolated from the surrounding environment and in which the pressure is set to a preset value, characterised in that at least one

face of said layers (1, 1', 101, 101') facing said volume (23) is provided with at least one channel (3).

17. A seal as claimed in claim 16, wherein said seal comprises a pressure detector (31, 131) connected with said volume (23).

18. A seal as claimed in claim 16, wherein a plurality of channels (3), arranged parallel to each other or in serpentine or in a grid or radially, are obtained on at least one face of at least one of said layers (A).

19. A seal as claimed in claim 16, wherein said layers are hollow cylindrical bodies (1, 1') of sheet metal.

20. A seal as claimed in claim 19, wherein said hollow cylindrical bodies (1, 1') are sealed along their edges (5, 5', 6, 6') by welding through the interposition of a corresponding first and second insert (7, 9).

21. A seal as claimed in claim 20, wherein said first insert is a metal ring (7), said inner cylinder (1, 1') and said outer cylinder (1, 1') being welded to the inner wall and to the lower edge of said metal ring (7), respectively.

22. A seal as claimed in claim 20, wherein said second insert is a metal cover (9), said inner cylinder (1, 1') and said outer cylinder (1, 1') being welded to the side edge of said metal cover (9).

23. A seal as claimed in claim 16, wherein said layers are disc-shaped members (101, 101') of sheet metal.

24. A seal as claimed in claim 23, wherein said discs (101, 101') are sealed along their edges by welding through the interposition of a corresponding ring-shaped metal insert (7, 9).

25. A seal as claimed in claim 21 or 24, wherein said ring (7, 107) has, on its inner wall, an annular groove (21, 121) communicating with said at least one channel (3).

26. A seal as claimed in claim 25, wherein said annular groove (7, 107) communicates with the outside through a radial bore (27, 127) in said ring (7, 107).

27. A seal as claimed in claim 26, wherein said radial bore (27, 127) is connected, outside said ring (7, 107), with a pressure detector (31, 131) through a capillary (29, 129).

28. A seal as claimed in any of claims 16 to 27, wherein said volume (23) is brought to a pressure above/below the external pressure.

29. A seal as claimed in any of claims 16 to 28, wherein at least one free layer (1") is provided in said volume (23).

30. A valve for fluids, characterised in that it includes a multilayer seal as claimed in any of claims 16 to 22 or 25 to 29.